

# Addendum

The preparation of the Guide has involved consultation with different Commission Services, the Member States representatives on the Technical Group on Evaluation and the participants in internal seminars at DG Regio. The authors are very grateful for a number of helpful comments and look forward to receiving further suggestions for any future follow-up of the Guide.

Most comments have been considered in the main text or in the Annexes. Some additional remarks have been included in the following, as a response to some of the most interesting questions raised during the consultation process.

## **GENERAL DEFINITIONS, CONTEXT, AND TECHNICAL ISSUES (Chapter 2)**

### **Spatial Impact**

The Guide does not offer a specific discussion about the spatial dimension of project analysis. This does not imply that in some cases this study is not relevant. For example a project in one region may spill over on other regions. There are specific EU measures for transfrontier problems, but it may occasionally happen that a project in an Objective 1 region has positive or negative effects on an Objective 2 region or vice versa. Good project identification (par. 2.2.1), and comprehensive discussion of externalities, including environmental impact, have often a spatial dimension that should be taken into account : economic analysis should include spill over effects, whenever they accrue (e.g. a neighbouring municipality, region or state).

As an example, according to a recent study by Prof. Beutel, University of Konstanz, 24% of financial resources of Objective 1 for the six less developed regions will have positive spill over also on other, more developed, EU regions. (see also [http://europa.eu.int/comm/regional\\_policy/sources/docgener/studies/study\\_en.htm](http://europa.eu.int/comm/regional_policy/sources/docgener/studies/study_en.htm)).

### **Internal Rate of Return vs. Net Present Value**

The two criteria are usually equivalent, and while the NPV is in principle more reliable than IRR, it suffers from being expressed in money value rather than as a pure number. However they offer the same insight into expected project performance, provided that the discount rate used to compute the NPV is the same as the required rate of return used to say whether an IRR is “high” or “low”. See par. 2.5.5 and Annexes A, B.

### **Externality**

Externality as defined in the Glossary (Economic Analysis) and Par. 2.5.2 points to real project effects falling on third parties without compensation. The typical example of negative externality is pollution. Sometimes a “pecuniary externality” has been defined as an indirect impact of a project (or policy) through price changes. This Guide does not recommend the consideration under CBA of this kind of indirect effects. In some cases some of the output of the project are zero-priced, e.g. roads. In this case, we just suggest using shadow prices of the direct benefit produced (e.g. time saved), as if it were a positive externality to the consumer, exactly as pollution is a negative externality that should be shadow-priced as well. Obviously one has to avoid double counting these direct benefits and financial revenues when prices are non-zero but are instead positive but below the opportunity cost (par. 2.5.3). This is a simplified, but sensible, approach to a complex issue: other kinds of externalities has been identified: for a history of the notion see Papandreou A., Externalities and institutions, Clarendon Press, Oxford, 1994.

### **Shadow wages**

The Commission does not recommend a specific shadow wage formula (see par. 2.5.3). Shadow wages should reflect actual value of labour, under different unemployment regimes. Usually, the higher the unemployment, the lower the shadow wage, because there is excess labour force available, whatever the

official (legal or contractual) wages. Thus shadow wages may differ among countries and regions. However within each Member State similar formulas should be used across regions. Results may differ, because economic conditions differ, but in principle the computing method should be consistent. Techniques for estimating shadow wages are contained in several manuals cited in the Bibliography (1. General).

#### **ADDITIONAL REMARKS ON SPECIFIC SECTORS**

##### **Waste treatment**

The list of possible environmental impacts of waste treatment projects (par. 3.1.6) is purely indicative. Many different types of impacts are associated with waste treatment facilities, not only incinerators and landfills, and depend on external and internal technical attributes of the plant, for example, geographical location of the plant, size of the plant and technology used, type of environmental management applied, and so on.

##### **On the socio-economic impact of pollution (energy projects, transport, etc.)**

A helpful source of information is the ExternE project, a comprehensive attempt to use a consistent methodology to evaluate the external costs associated with a range of different fuel cycles. The project involves over 30 teams from research institutes. The project has successfully: (1) developed an effective “bottom-up” methodology, (2) Assessed many different fuel cycles consistently, (3) Made reliable assessments of marginal costs, (4) Identified the key externality issues. Impact assessment and valuation are performed using ‘damage function’ or ‘impact pathway approach’.

Much information currently available on environmental externalities, as a result of the ExternE research project, is especially useful for sections on transport, energy and industry and can obviously be seen as a source of illustration for methodologies presented in annexe E “Monetary evaluation of environmental services” of the manual. More information is available on the project web site: <http://externe.jrs.es/overview.html>

##### **Time horizon in energy transport distribution and other projects.**

Par 3.4.4 states that 25-30 years may be an appropriate time horizon for some energy projects. However for some components of the system a longer horizon may be appropriate. The indication of a time horizon should be understood as a minimum, not as a maximum.

##### **Ports and airports**

The Guide does not offer a specific discussion about the effects of port and airport development on inland connecting modes. The text only mentions provision of links, but the effect of increased port or airport traffic on all users of existing links could be an important issue for this kind of project.

##### **Training infrastructures**

Par. 3.7.1 offers an indicative list of specific objectives for project appraisal. This list should be viewed in conjunction with the discussion in par. 3.5.5 where the Guide states that the final socio-economic benefits of the project are related to employability and prospective earnings of trainees. No educational project can be justified without a sound analysis of its impact on the relevant segment of the labour market.

##### **Transport projects**

In the economic analysis of transport projects (par 3.3.5) we discuss changes in consumer surplus. We would clarify as follows : consumer surplus is usually measured in transport projects in terms of generalised transport costs, which include all costs perceived by consumers either monetary costs or time costs.

In the context of our discussion in that paragraph we should add that the demand for transport may be rigid, but it can shift between different modes.

We do not discuss in this Guide models for traffic generation forecasts, which is a rather specialised and difficult research field. For a wider discussion on transport project appraisal see *Transports: choix des investissements et coût des nuisances*, Commissariat général du Plan, Paris, Juin 2001.

### **Water projects**

Water demand may be price inelastic in the short term and for some kind of uses, for example drinkable water, while in the longer-term –when water is more available and income raises- the price elasticity for water can rise for other uses. Thus the analysis of demand should carefully distinguish between kind of uses and forecast price elasticities (in the longer term, e.g., users of irrigation water can switch to more efficient forms of irrigation such as trickle systems).

It is also important in some cases to consider derived demand, that is demand of water derived from the demand of the final good or crop produced.

In the discussion about shadow pricing of water projects, an alternative to willingness-to-pay is to forecast long run marginal costs (including operation, maintenance, administration and a normal return on capital).

### **Forestry**

We do not recommend using a specific discount rate for forestry or other environment related projects. Some agencies in the EU Member States sometimes use multiple discount rates for different sectors and assign a lower discount rate to forestry or other long term projects. This practice is a shortcut, but is not easy to justify: the best practice is to try to identify all the benefits of this project and include them in cost-benefit analysis, without allowing them the implicit premium implied by a lower discount rate.

Forestry is typically associated with multiple objectives. The list in par. 3.10.1 is just indicative. In some cases, landscape, education and health benefits may be important. Investment in forestry in fact tends to create multiple effects, including non-market effects associated with forest environments and landscapes, biodiversity, and outdoor recreation activities. The former effect is enhanced when the project is located near cities, because forests may attract more visitors. However displacement effects from other areas should be considered and the net impact appraised.

The time horizon for forestry projects clearly varies with the particular species involved and with their rotation in a sustainable cycle.

There is a wide literature on the economic appraisal of forestry projects, particularly promoted by FAO and the World Bank. Their web sites offer recent updates of research in this area (see <http://www.worldbank.org> and <http://www.fao.org/forestry/index.jsp>).

### **Bibliography**

Cost-benefit analysis literature is huge, and the small number of references in this guide are just a sample, not necessarily representative of all strands of research and experience in related publications, most of them in English and French.

Readers interested in more comprehensive or more specific reading may consult economic literature databases, such as Econlit.